



## National Weather Service Grand Rapids Event Summary

### Arctic cold front brings quick blast of snow

01/20/11 – 01/21/11

#### Overview

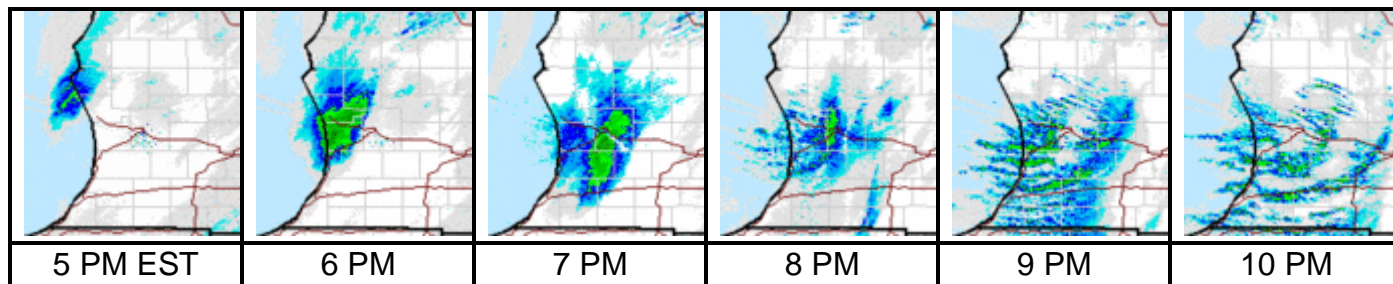
A powerful arctic cold front moved through Southwest Lower Michigan on Thursday evening January 20<sup>th</sup>, 2011. Strong winds and brief but very heavy snow accompanied the front. Eyewitnesses in Ottawa County described it as a “wall of snow” moving across the area. Visibilities at several airport weather observation sites saw very rapid drops in visibility associated with this snow (Table 1). There were many reports of visibilities briefly dropping to below ¼ mile, but then increasing again almost as rapidly to a few miles. This posed significant problems with the evening commute over much of the area.

**TABLE1** . Visibility changes at selected locations.

Station location	visibility before front	visibility after passage of front
Ludington, MI	10 miles at 3:55 PM EST	½ miles at 4:35 PM EST
Muskegon, MI	10 miles at 5:55 PM EST	¾ miles at 6:25 PM EST
Holland, MI	10 miles at 5:53 PM EST	¾ miles at 6:11 PM EST
Fremont, MI	7 miles at 6:12 PM EST	¾ miles at 6:33 PM
Grand Rapids, MI	10 miles at 5:53 PM EST	1 mile at 6:47 PM EST

## **Radar**

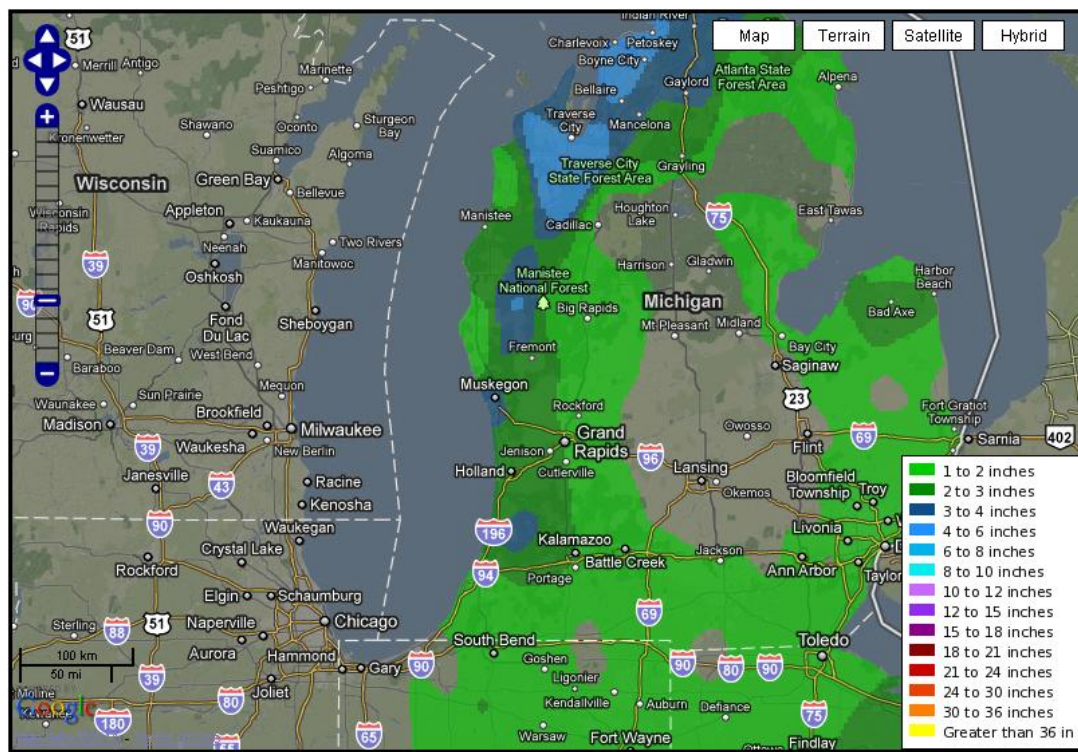
Radar images show the area of snow spreading from northwest to southeast with the cold front (Fig. 1). Lake effect snow bands developed 8 to 9 PM as much colder air crossed Lake Michigan into the area behind the front. The front itself was associated with the arc of heavier snowfall seen near I-94 between 9 and 10 PM.



**Fig. 1. Radar images at selected times on January 20<sup>th</sup>, 2011.**

## **Storm Total Precipitation**

Snowfall amounts generally were meager with a swath of 2 to 3 inches over many locations west of Highway 131, and a few locations reporting 3 to 4 inches (Figs. 2 and 3). The very cold air associated with this front resulted in a large number of small, grainy snowflakes that greatly impacted visibilities, but did not result in any substantial snow depths.



**Fig. 2. Regional 24-hour snowfall ending 7 AM Friday January 21<sup>st</sup>, 2011.**

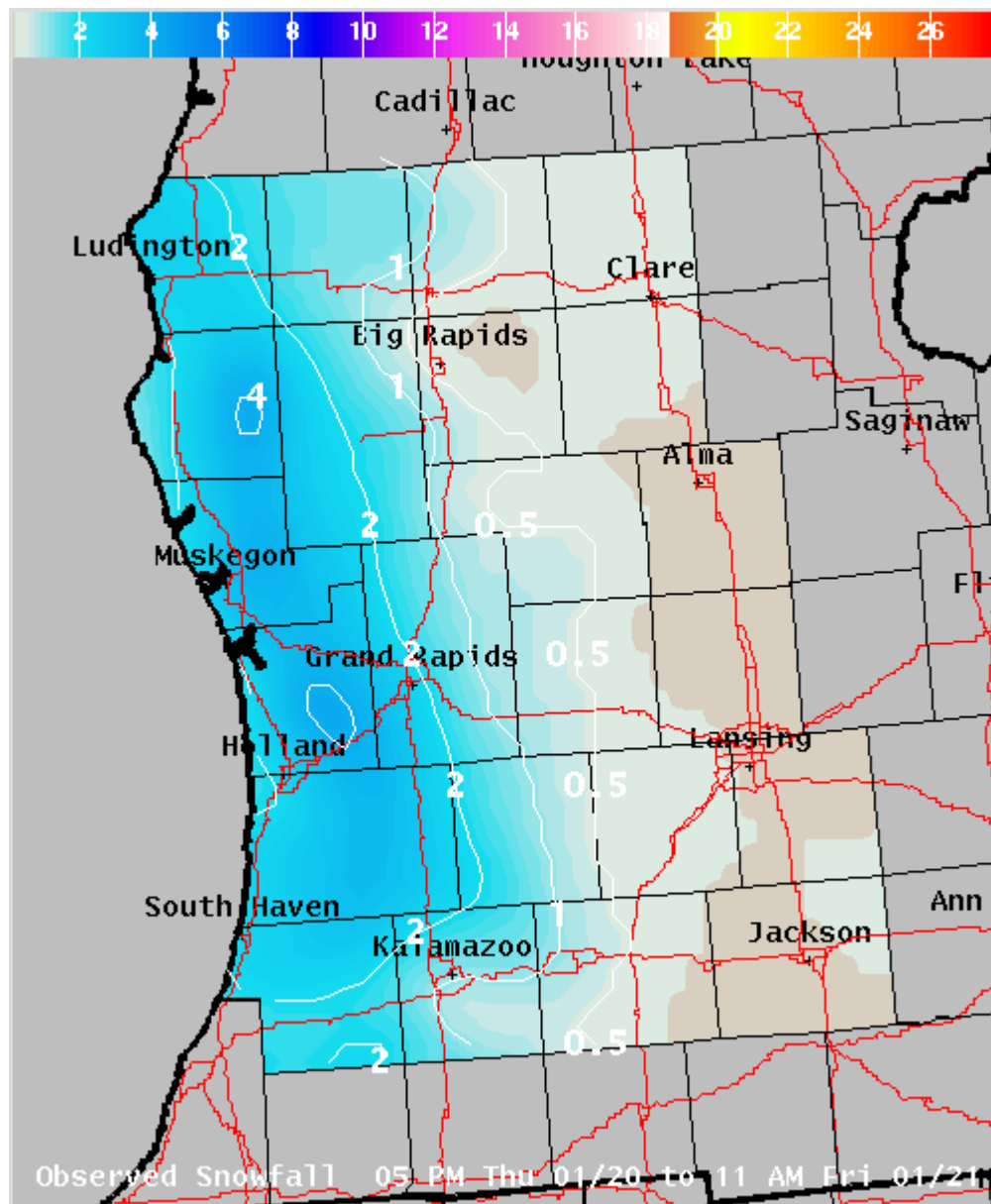


Fig. 3. Storm total snow map ending 11 AM Friday January 21<sup>st</sup>, 2011.

## **Local Storm Reports**

PRELIMINARY LOCAL STORM REPORT...SUMMARY  
NATIONAL WEATHER SERVICE GRAND RAPIDS MI  
1015 AM EST FRI JAN 21 2011

..TIME...	...EVENT...	...CITY LOCATION...	...LAT.LON...
..DATE...	...MAG....	..COUNTY LOCATION..ST..	...SOURCE....
..REMARKS..			
1127 PM	SNOW	4 NNW GRAND RAPIDS	43.01N 85.69W
01/20/2011	M2.8 INCH	KENT MI	BROADCAST MEDIA
TOTAL SNOWFALL FOR THE DAY. 0.8 INCHES IN THE MORNING AND 2.0 INCHES IN THE EVENING. WZZM-13 REPORT FROM 3 MILE AND ALPINE.			
1201 AM	SNOW	2 W PLAINWELL	42.44N 85.68W
01/21/2011	M2.5 INCH	ALLEGAN MI	TRAINED SPOTTER
THIS WAS A 24 HOUR TOTAL.THE SNOW DEPTH WAS 7 INCHES.			
0536 AM	SNOW	BLOOMINGDALE	42.38N 85.96W
01/21/2011	M3.0 INCH	VAN BUREN MI	CO-OP OBSERVER
24 HOUR SNOWFALL ENDING AT 5 AM.			
0621 AM	SNOW	9 E WHITE CLOUD	43.57N 85.59W
01/21/2011	M1.0 INCH	NEWAYGO MI	CO-OP OBSERVER
24 HOUR SNOWFALL ENDING AT 6 AM.			
0624 AM	SNOW	PARIS	43.77N 85.50W
01/21/2011	M1.0 INCH	MECOSTA MI	BROADCAST MEDIA
24 HOUR SNOWFALL ENDING AT 6 AM.			
0624 AM	SNOW	SCOTTVILLE	43.95N 86.28W
01/21/2011	M2.0 INCH	MASON MI	BROADCAST MEDIA
24 HOUR SNOWFALL ENDING AT 6 AM.			
0657 AM	SNOW	EAST GRAND RAPIDS	42.94N 85.61W
01/21/2011	M1.1 INCH	KENT MI	CO-OP OBSERVER
24 HOUR SNOWFALL ENDING AT 645 AM.			
0657 AM	SNOW	5 NNW LANSING	42.80N 84.58W
01/21/2011	M0.2 INCH	CLINTON MI	OFFICIAL NWS OBS
24 HOUR SNOWFALL ENDING AT 645 AM.			
0657 AM	SNOW	4 E KENTWOOD	42.90N 85.51W
01/21/2011	M1.0 INCH	KENT MI	OFFICIAL NWS OBS
24 HOUR SNOWFALL ENDING AT 645 AM.			
0657 AM	SNOW	GRANDVILLE	42.91N 85.76W
01/21/2011	M2.9 INCH	KENT MI	NWS EMPLOYEE
24 HOUR SNOWFALL ENDING AT 645 AM.			
0657 AM	SNOW	4 SSE MUSKEGON	43.17N 86.22W
01/21/2011	M3.0 INCH	MUSKEGON MI	OFFICIAL NWS OBS
24 HOUR SNOWFALL ENDING AT 645 AM.			
0721 AM	SNOW	HASTINGS	42.65N 85.29W
01/21/2011	M0.5 INCH	BARRY MI	CO-OP OBSERVER
24 HOUR SNOWFALL ENDING AT 7 AM.			

0736 AM	SNOW	LAWTON		42.17N 85.85W
01/21/2011	M3.0 INCH	VAN BUREN	MI	TRAINED SPOTTER
24 HOUR SNOWFALL ENDING AT 730 AM.				
0746 AM	SNOW	BIG RAPIDS		43.70N 85.48W
01/21/2011	M2.0 INCH	MECOSTA	MI	CO-OP OBSERVER
24 HOUR SNOWFALL ENDING AT 7 AM.				
0804 AM	SNOW	3 NNE HOLLAND		42.82N 86.09W
01/21/2011	M3.0 INCH	OTTAWA	MI	COCORAHS
24 HOUR SNOWFALL ENDING AT 6 AM.				
0804 AM	SNOW	3 NNE PAW PAW		42.26N 85.87W
01/21/2011	E1.5 INCH	VAN BUREN	MI	COCORAHS
24 HOUR SNOWFALL ENDING AT 7 AM.				
0804 AM	SNOW	4 NNE WALKERVILLE		43.77N 86.09W
01/21/2011	M3.9 INCH	OCEANA	MI	COCORAHS
24 HOUR SNOWFALL ENDING AT 7 AM.				
0804 AM	SNOW	8 NW MONTAGUE		43.50N 86.47W
01/21/2011	M0.3 INCH	OCEANA	MI	COCORAHS
24 HOUR SNOWFALL ENDING AT 7 AM.				
0804 AM	SNOW	2 W WAYLAND		42.67N 85.68W
01/21/2011	M1.8 INCH	ALLEGAN	MI	COCORAHS
24 HOUR SNOWFALL ENDING AT 7 AM.				
0804 AM	SNOW	3 W JACKSON		42.25N 84.47W
01/21/2011	M0.5 INCH	JACKSON	MI	COCORAHS
24 HOUR SNOWFALL ENDING AT 545 AM.				
0804 AM	SNOW	SE ADA		42.95N 85.49W
01/21/2011	M0.7 INCH	KENT	MI	COCORAHS
24 HOUR SNOWFALL ENDING AT 7 AM.				
0804 AM	SNOW	4 WNW CALEDONIA		42.81N 85.59W
01/21/2011	M0.8 INCH	KENT	MI	COCORAHS
24 HOUR SNOWFALL ENDING AT 630 AM.				
0804 AM	SNOW	6 NNW SCOTTVILLE		44.03N 86.33W
01/21/2011	M2.4 INCH	MASON	MI	COCORAHS
24 HOUR SNOWFALL ENDING AT 5 AM.				
0804 AM	SNOW	3 W WALKER		43.00N 85.83W
01/21/2011	M1.4 INCH	OTTAWA	MI	COCORAHS
24 HOUR SNOWFALL ENDING AT 630 AM.				
0826 AM	SNOW	1 NE VICKSBURG		42.13N 85.52W
01/21/2011	M2.3 INCH	KALAMAZOO	MI	CO-OP OBSERVER
24 HOUR SNOWFALL ENDING AT 7 AM.				
0833 AM	SNOW	BATTLE CREEK		42.32N 85.19W
01/21/2011	M1.5 INCH	CALHOUN	MI	TRAINED SPOTTER
24 HOUR SNOWFALL ENDING AT 830 AM.				

0849 AM	SNOW	2 W RICHLAND		42.38N 85.49W
01/21/2011	M3.0 INCH	KALAMAZOO	MI	PUBLIC
24 HOUR SNOWFALL ENDING AT 8 AM.				
0908 AM	SNOW	3 SW ROCKFORD		43.09N 85.60W
01/21/2011	M1.0 INCH	KENT	MI	CO-OP OBSERVER
24 HOUR SNOWFALL ENDING AT 7 AM.				
0956 AM	SNOW	ALLENDAL		42.97N 85.95W
01/21/2011	M2.8 INCH	OTTAWA	MI	TRAINED SPOTTER
24 HOUR SNOWFALL ENDING AT 8 AM.				
1002 AM	SNOW	2 NE BYRON CENTER		42.83N 85.70W
01/21/2011	M1.5 INCH	KENT	MI	COCORAHS
24 HOUR SNOWFALL ENDING AT 7 AM.				
1002 AM	SNOW	4 NNW HOLLAND		42.84N 86.14W
01/21/2011	M1.5 INCH	OTTAWA	MI	COCORAHS
24 HOUR SNOWFALL ENDING AT 7 AM.				
1002 AM	SNOW	1 E MIDDLEVILLE		42.71N 85.44W
01/21/2011	M1.0 INCH	BARRY	MI	COCORAHS
24 HOUR SNOWFALL ENDING AT 7 AM.				
1002 AM	SNOW	1 W DEWITT		42.84N 84.60W
01/21/2011	M0.2 INCH	CLINTON	MI	COCORAHS
24 HOUR SNOWFALL ENDING AT 7 AM.				
1002 AM	SNOW	3 W HANOVER		42.10N 84.61W
01/21/2011	M1.2 INCH	JACKSON	MI	COCORAHS
24 HOUR SNOWFALL ENDING AT 8 AM.				
1002 AM	SNOW	4 NW RIVES JUNCTION		42.43N 84.52W
01/21/2011	M0.2 INCH	JACKSON	MI	COCORAHS
24 HOUR SNOWFALL ENDING AT 9 AM.				
1002 AM	SNOW	3 ESE WOLF LAKE		43.24N 86.05W
01/21/2011	M2.0 INCH	MUSKEGON	MI	COCORAHS
24 HOUR SNOWFALL ENDING AT 7 AM.				
1002 AM	SNOW	3 WSW HART		43.68N 86.42W
01/21/2011	M0.9 INCH	OCEANA	MI	COCORAHS
24 HOUR SNOWFALL ENDING AT 7 AM.				
1002 AM	SNOW	5 WNW HOLLAND		42.81N 86.20W
01/21/2011	M1.0 INCH	OTTAWA	MI	COCORAHS
24 HOUR SNOWFALL ENDING AT 730 AM.				